OBJECTIVES: Although the relationship between use of glucocorticoids (GC) and occurrence of adverse events (AE) is widely acknowledged, the estimation of risk size of specific AE is still imprecise. The aim of study was to quantify the incidence and economic cost of selected steroid-related AE in GC-users regardless of baseline chronic disease. **METHODS:** Review of the available data about the consequences of long-term use of oral GC (depending on prednisone or its equivalent dose and period of use) was conducted. From 162 full-text publications (10024 abstracts), four with mixed population and >5 years median follow–up were valuable. Hip fracture (HFr), cataract (CAT) and diabetes mellitus (DM) were chosen as the common and most cost generating AE connected with oral GC treatment. A Markov model with a lifetime horizon (30 years) was developed to forecast incidence and health care cost of three regimen (non-GC, low dose GC <2.5 mg, high dose GC >7.5 mg). Direct medical costs were included in the analysis. **RESULTS:** For a lifetime horizon the incidence of HFr, CAT and DM increased from 0.77% to 5.49%, 23.48% to 91.04% and 12.34% to 17.02% (7.1, 3.9, 1.4 fold increase) respectively for comparison non-GC versus high dose GC. For selected cohort of 1,000 you need to treat 34, 2, 22 patients respectively (low dose GC instead of high dose GC) to prevent one additional case of HFr, CAT, DM. Shorter duration of steroid therapy (5 years) provide two Quality-Adjusted Life Months gained (per one patient) and leads to 2,230, 35,460, 6,920 avoided cases of HFr, CAT, DM (per 100,000 cohort). The use of low-dose or non-GC is cost-effective strategy (total cost per patient 2,958 PLN, 1,301 PLN, respectively) compared with high-dose GC (10,823 PLN). **CONCLUSIONS:** Oral GC treatment can lead to dose-dependent increase in the risk of selected AE.

PIH21

POTENTIALLY INAPPROPRIATE MEDICATION IN THE ELDERLY – RELEVANCE AND ECONOMICS OF THE 30 TOP-SELLING PRISCUS AGENTS IN GERMANY

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OBJECTIVES: Some drugs increase risk for adverse effects in elderly patients. Accordingly, lists of potentially inappropriate medication (PIM) that should be avoided in elderly patients have been proposed. In 2010 an expert panel published a PIM list adapted to the German drug market (PRISCUS-list) which lists 83 inappropriate agents and their recommended surrogates. This study calculates the amount of drug reimbursement of PIM and the potential saving using appropriate surrogates recommended by the PRISCUS list from the perspective of statutory health insurance (SHI). **METHODS:** Data was provided by AOK Research Institute (WIdO). Study material consists of a register extraction of the top 30 drugs (by sales) on PRISCUS-list in 2009 for patients ≥65 years of the entire SHI-population. We calculated the percentage of sales and defined daily doses (DDD) for patients ≥65 compared to the total SHI-population. Costs for the recommended substitution were estimated by different scenarios. **RESULTS:** In 2009, the proportion of the top 30 drugs on the PRISCUS-list that were prescribed to patients ≥65 was 58.2%. Sotalol was the drug with the largest proportion of DDD prescribed to patients ≥65 (92.9%). Drug reimbursement for the top 30 PIM medications prescribed to patients ≥65 were €305.7 million (54.3% of total reimbursement). Reimbursement for Solifenacin was highest with €32.5 million. Prescription of the surrogates would lead to increasing costs for the German health care system. Those were calculated to range between €325.9 million and €810.0 million. **CONCLUSIONS:** This is the first study assessing the economic burden of PIM according to PRISCUS-list in Germany. The results show that a more appropriate medication for the elderly comes along with additional costs. For a final evaluation of relevance and economics of PIM, costs of adverse drug events caused by PIM and clinical feasibility of substitution have to be taken into consideration.

PIH22

COST-EFFECTIVENESS ANALYSIS OF USE OF DYDROGESTERONE IN PREMENSTRUAL SYNDROME

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OBJECTIVES: The primary objective of the study was the analysis of pharmacoeconomic expediency of administration of dydrogesterone (Duphaston®) for premenstrual syndrome (PMS) treatment in comparison with micronized progesterone (Utrogestan®). **METHODS:** The mathematical modeling with dydrogesterone or micronized progesterone was applied in the study. For the calculation of the efficacy data of clinical trials were used. Costs were calculated on the basis of Russian prices (grls. rosminzdrav. ru). The model was constructed as following: for each branch of the decision tree, cost and efficacy for a group of 100 patients (female aged 18 – 45 years) and per patient were analyzed. Modeling duration was 3 months (therapy during three cycles). The cost-effectiveness ratio (CER) and incremental cost-effectiveness ratio (ICERs) were calculated. Results were evaluated to cost-effectiveness threshold. Efficiency was estimated on the basis of clinical trials (effectiveness). Calculation of cost included: the cost of drugs administration course; costs of consultative and diagnostic appointments of the gynecologist; the cost of inefficient therapy – costs of additional diagnostic examination. The comprehensive sensitivity analysis was performed. **RESULTS:** The cost of the total course of therapy with dydrogesterone was more expensive in comparison with micronized progesterone – 84,1 EUR against 82,6 EUR. Strategy of administration of dydrogesterone showed more efficiency in comparison with micronized progesteron (8% increase of effectiveness). CER for dydrogesterone and micronized progesterone were 115.20 and 127.07 respectively. The ICER was 18.75 Eur per patient that is much lower than a cost-effectiveness threshold in Russia (27922.8 EUR). The sensitivity analysis confirmed conclusions of the main scenario. **CONCLUSIONS:** The strategy of administration of dydrogesterone in PMS is economically expedient from the point of view of cost-effectiveness ratio. In addition, increase of effectiveness was noted for use of dydrogesterone. The study was conducted at Abbott support.

PIH23

COST-BENEFIT MODEL OF VARYING NEXPLANON AND OTHER LONG-ACTING REVERSIBLE CONTRACEPTIVE (LARC) METHODS: UPTAKE COMPARED TO THE ORAL CONTRACEPTIVE PILL: UK PERSPECTIVE

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OBJECTIVES: Cost is considered one of the major barriers to greater use of LARC (Long-Acting Reversible Contraceptive) methods, especially cost of treatment initiation. However, when considering their contraceptive efficacy alongside cost of pregnancy, LARC methods are deemed by NICE to be more cost-effective than combined oral contraceptive pills even at one year of use. (NICE LARC CG30 2005). **METHODS:** A 3 year time-horizon cost-benefit model was developed to assess budgetary impact of increasing LARC uptake (implant, IUD, IUS and injectable) compared to the oral contraceptive pill, in UK women aged 16-49 who currently use the following contraceptives of interest: non-LARC method (defined as contraceptive pill only) or LARC methods (IUD, IUS, injectable, implant). A weighted-average price based on current market shares was calculated, for all contraceptive pills currently available in the UK. Increased uptake of any LARC method was offset against a reduction in contraceptive pill usage. Unintended pregnancies, based on typical failure rate, occurring with all treatments considered was taken into account. **RESULTS:** Of approximately 14,750,000 women aged 16-49 in the UK, official statistics confirm 37% use contraceptive methods of interest to our model. This proportion formed our cohort of approximately 5,500,000 UK women aged 16-49, which was followed over a 3 year time horizon. A 100% increase in uptake of each LARC method would lead to a 49% decrease in oral contraceptive pill uptake. Over a three year period this would save 374,794 unintended pregnancies, and elicit financial savings of £630,831,022, on which £54,098,847 is attributable to treatment costs (ingredient, consultations, removal/insertion costs) and £576,732,175 to the cost of unintended pregnancies (live birth, miscarriage, abortion, ectopic pregnancy). **CONCLUSIONS:** The model projects that increasing LARC uptake will result in a significant reduction in the number of unintended pregnancies, with consequent savings to the NHS across the UK.

PIH24

MISOPROSTOL VAGINAL INSERT PHARMACOECONOMIC MODEL FOR 5 EUROPEAN COUNTRIES

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OBJECTIVES: Our aim was to assess the costs and consequences of labour induction using misoprostol vaginal insert (MVI) compared with currently used technologies using a specifically developed user-friendly decision model developed for Austria, Poland, Romania, Russia and Slovakia. **METHODS:** The model was developed in Microsoft Office Excel and compares clinical and safety aspects like time to vaginal delivery, time to active labour, occurrence of cesarean delivery and adverse events of MVI with selected comparators. Efficacy and safety data were retrieved from targeted literature review, conducted in the main medical databases. Country-specific information about costs and resource use was incorporated into the model. Local data were collected for each country via a specifically developed questionnaire. The model considered the hospital and public payer perspectives. The model generated results as an incremental difference between the total costs related to labour induction with MVI or a comparator. The threshold price of MVI was also calculated. **RESULTS:** Local Key Opinion Leaders recommended the following comparators: dinoprostone vaginal insert (DVI; Austria), dinoprostone vaginal tablets (Dtab; Austria, Slovakia), dinoprostone cervical gel (Dgel; Poland, Russia, Slovakia) and oxytocin (Austria, Poland, Romania, Russia). The hospital perspective was chosen as default (additionally the public payer perspective was adopted for 2 countries). The use of MVI in most scenarios is related to a reduction in time consumption of hospital staff and in the length of patients' stay in hospital wards. MVI was less costly or marginally more expensive in 80% of cases. **CONCLUSIONS:** Induction of labour with the use of MVI using a hospital perspective, brought savings in most countries and scenarios in comparison to other prostaglandins (DVI, Dtab, Dgel).

PIH25

COST EFFECTIVENESS ANALYSIS OF A VACCINATION PROGRAMME FOR THE PREVENTION OF HERPES ZOSTER AND POST-HERPETIC NEURALGIA IN ADULTS AGED 65 AND OVER IN NORWAY

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OBJECTIVES: Herpes Zoster is a very painful and debilitating disease for which no satisfactory treatment exist. A vaccine is licensed in Europe for the prevention of Herpes Zoster (HZ) and postherpetic neuralgia (PHN) in adults aged ≥50 years and is recommended in France and UK. The objective of this study was to assess the cost-effectiveness of vaccination programs in people aged 65 years and over in Norway. **METHODS:** An existing European Markov cohort Model was adapted to the Norwegian health care setting. Health states considered are healthy, HZ, PHN, healthy post-HZ and death. HZ and PHN states are further split by pain severity (mild, moderate or severe). A vaccine efficacy durability model based on the pivotal trial data was included to simulate waning in the efficacy. The cost-effectiveness outcomes were assessed from both the third party payer and the societal perspective. First, analysis comparing a HZ vaccination policy for adults aged ≥65 years with a no vaccination policy was done. Then, analysis comparing vaccination policies of 5-years age class cohorts (from 65 to 100 years old) to a no vaccination policy were conducted. Input data were obtained from Norwegian sources whenever avail-

able. **RESULTS:** The strategy of vaccinating people over 65 yo showed incremental cost-effectiveness ratios of 41,467€/QALY gained from a payer perspective and 40,733€/QALY from a societal perspective. The analysis by age group showed that the ICER is age-dependent, the lowest ICER (30,780€/QALY in both perspectives) having been found in the cohort 70-74 years old. In sensitivity analyses data on the duration of PHN, utilities and vaccine efficacy duration showed a major impact on the results. **CONCLUSIONS:** Our cost-effectiveness analysis shows that a HZ vaccination policy for adults aged ≥65 years in Norway could be cost-effective and provide substantial public health benefits in the Norwegian health care system.

PIH26

COST-EFFECTIVENESS ANALYSIS OF SURGICAL MANAGEMENT OF STRESS URINARY INCONTINENCE WITH SINGLE-INCISION MINI-SLING VERSUS TENSION-FREE VAGINAL OBTURATOR IN SPAIN

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OBJECTIVES: To analyze the cost effectiveness of surgical management of stress urinary incontinence (SUI) in women with single-incision mini-sling (SIMS) compared with tension-free vaginal obturator (TVT-O) **METHODS:** A cost-effectiveness analysis based on the results of interventions performed with TVT-O (2005-2008) and SIMS (2008-2011) in women with a diagnosis of SUI was performed. The clinical effectiveness was defined as an objective cure at 12 months (pad-test <1 g/h). A perspective of the hospital payer was adopted; therefore, only direct health care costs (diagnostic and surgical procedures, medical devices, medications, hospital stay times and staff) were included. CI95% of total cost was estimated by bootstrapping; later, different sensitivity analyses were conducted **RESULTS:** Procedures were carried out in 81 women (44 in the SIMS group and 37 in the TVT-O). A small difference (6.7%) in clinical effectiveness was observed in favour of SIMS, however, it was not statistically significant (SIMS: 93.2% and TVT-O: 86.5%). The total annual cost per patient with SIS was lower (2,059€; CI95%: 1,914-2,285) than with TVT-O (2,821€; CI95%: 2,661-2,997), showing a statistically significant cost saving of 762€ (CI95%: 516-987). In the base case, the probability of SIMS is less costly than TVT-O was 100%. The sensitivity analysis showed that the cost determinant was the length of the hospital stay, observing that an equivalent cost was only achieved if there was no cause for any hospital stay with TVT-O. **CONCLUSIONS:** The use of single-incision mini-sling is associated with an comparable clinical effectiveness but with a 762€ per patient reduction of the average annual cost, compared to tension-free vaginal obturator. Therefore, the results suggest that, over a post-operative period of twelve months, tension-free tape single-incision mini-sling is a dominant alternative to tension-free vaginal obturator because of a lower cost and a comparable effectiveness.

PIH27

A COST-EFFECTIVENESS ANALYSIS OF DIFFERENT TYPES OF LABOR FOR SINGLETON PREGNANCY – REAL LIFE DATA

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OBJECTIVES: To assess cost, clinical outcomes and cost-effectiveness of different types of labor in singleton pregnancies. **METHODS:** A decision model was used to compare vaginal labor, induced labor and planned cesarean section. All data were taken from the Book of Labor from the University Hospital for Gynecology and Obstetrics "Narodni Front" in Serbia, for labors conducted during one month period in 2011. Successful delivery, (i. e. labor that began up to 42 gestation weeks, without maternal mortality and the newborn Apgar scores greater than or equal to seven in the first and fifth minute of life) was considered as the outcome of the cost effectiveness analysis. To test the robustness of this definition probabilistic sensitivity analysis was performed. **RESULTS:** From a total of 667 births, vaginal labor was conducted in 98 cases, induced vaginal in 442, while planned caesarean section was performed 127 times. Emergency caesarean section as a complication was much higher in the vaginal labor cohort compared to the induced vaginal cohort (OR = 17.374, 95% CI: 8.522 to 35.418, p < 0.001). The least costly type of labor was induced vaginal labor: average cost 461 euro, with an effectiveness of 98.17%. Both, vaginal and planned cesarean labor, were dominated by the induced labor. The results were robust. **CONCLUSIONS:** Elective induction of labor was associated with the lowest cost compared to other types of labor, with favorable maternal and neonatal outcomes.

PIH28

COST EFFECTIVENESS OF PENTAVALENT ROTAVIRUS VACCINE (RV5) IN SLOVENIA

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OBJECTIVES: To assess the potential impact of universal vaccination with RV5 on health care burden and costs associated with rotavirus gastroenteritis (RGE) among a hypothetical birth cohort of 21,938 Slovenian children in their first five years of life **METHODS:** A Markov model was used to evaluate the cost per quality-adjusted-life-year (QALY) and public health impact of vaccination with RV5 from the health care payer and societal perspectives. The base case assumes three dose coverage rate of 94% at 2, 4 and 6 months among the vaccinated, the remaining receiving 1 or 2 doses. In the absence of universal vaccination 819 hospitalizations and 3,276 office visits were projected to occur in the first 5 years of life. RGE associated costs include direct and indirect costs associated with parental work loss. The efficacy of RV5 in reducing health care resource utilization is based on the results of the Rotavirus Efficacy and Safety Trial (REST). **RESULTS:** A universal RV5 vaccination program is projected to reduce hospitalizations, office visits and parental work loss by 94, 76 and 87% respectively. The cost per case avoided would be 165 Euros, and cost per hospitalization avoided would be 1,639 Euros with implementation of universal vaccination. The cost per QALY saved would be 29,452 Euros and 20,453 Euros from the health care and societal perspectives respectively. **CONCLUSIONS:** RV5 is projected to avert substantial number of RGE hospitalizations and office visits in Slovenia and would be considered a cost effective intervention. KEYWORDS: rotavirus vaccine, cost effectiveness, QALY.

PIH29

HEALTH ECONOMIC MODEL ON THE COSTS AND EFFECTS OF ROTAVIRUS VACCINATION IN ROMANIA

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OBJECTIVES: Rotavirus gastroenteritis (RVGE) is one of the most frequent diseases in children less than 5 years old. Today, no recommendation for general rotavirus vaccination exists in Romania, which leads to a vaccination coverage rate of < 8%. We model whether the strategy of "Universal Mass Vaccination" should be cost-effective from the Social Health Insurance Fund (SHIF) perspective. **METHODS:** We adapted an already published simple model to estimate the cost-effectiveness of rotavirus vaccination in Romania. It helps identifying the drivers of the economic analysis in a birth cohort of 194,411 children (Romania 2012) followed over a period of 5 years. In the model, vaccine efficacy results from international clinical trials are combined with Romanian epidemiology and cost data from the SHIF perspective for 2012. The model assumes a theoretical vaccination rate of 100% and uses discount rates of 3% on costs and effects. Results are tested on their robustness using univariate sensitivity analysis. **RESULTS:** The model predicts that a two-dose rotavirus vaccine could avoid around 82,581 mild, 51,328 moderate and 3,075 severe RVGE cases. Moderate and severe events are associated with physician visits and hospital stays respectively. These also lead to a total cost saving of € 2.4 million for indirect cost estimates. The main factors responsible for the savings are the reduction in hospital stays, in productivity losses of parents and in medical visits. Sensitivity analysis indicates the importance of good epidemiological data and cost numbers on productivity loss. **CONCLUSIONS:** General vaccination against rotavirus could avoid many of the severe diarrhea events in children less than 5 years old in Romania. Depending on the price per course, the vaccination strategy will lead to societal cost gain.

PIH30

COST-EFFECTIVENESS ANALYSIS OF COFFEE CONSUMPTION FOR PREVENTION OF ALL-CAUSE MORTALITY IN GERMANY

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OBJECTIVES: Coffee contains over 1,000 distinct molecular compounds and is one of the most widely consumed beverages worldwide. Epidemiologic studies have shown an inverse relationship between coffee consumption and all-cause mortality. This analysis aims to assess the cost-effectiveness of coffee from a blended German consumer and payer perspective. **METHODS:** An existing decision-analytic model was adapted with German data. A cohort life-table analysis was developed to model life-years (LYs) of German coffee consumers vs. non-consumers over a lifetime horizon. Age- and gender-specific mortality rates were used to model survival outcomes. Relative risks of death by average coffee intake (cups/day) were obtained from a recent large, prospective cohort study. Cost were considered for cost per cup (home prepared and from a national sample of low and high-cost vendors) and for health care. Incremental analyses were conducted by cost, sex, and level of daily coffee consumption. Deterministic and probabilistic sensitivity analysis was performed. **RESULTS:** Coffee increased undiscounted LYs in 1, 2-3, 4-5, and 6+ cup/day male (0.65, 1.10, 1.33 and 1.10) and female (0.45, 1.21, 1.51, 1.41) consumers, respectively, versus non-consumers. ICERs per undiscounted LY gained were € 3,938/ € 7,047/ € 16,271 for males and € 5,514/ € 5,066/ € 13,537 for females, respectively, for 1, 2-3, and 4-5 cups/day consumption of home-prepared coffee; ≥6 cups/day was strictly dominated. Consumption of 4-5 cups per day purchased from high-cost vendors was not cost-effective (male: € 168,780/ female: € 135,636). Results were consistent throughout the sensitivity analyses, whereas coffee effectiveness in preventing death and coffee acquisition cost has the largest impact on ICERs. **CONCLUSIONS:** In this analysis, coffee consumption was associated with increased LYs and was shown to be potentially cost-effective, especially if home-prepared or purchased from low-cost vendors. Given the observational nature of the study data, further research is warranted to validate these findings.

PIH31

COST-EFFECTIVENESS ANALYSIS OF SCREENING SYPHILIS AMONG PREGNANT WOMEN

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OBJECTIVES: Maternal and congenital syphilis prevalence rates are currently rapidly increasing in Mongolia. On-Site screening and same-day treatment for syphilis in pregnancy prevents greater numbers of congenital syphilis and its complications. The Ministry of Health has been implementing on-site rapid screening test (RT) intervention and same day treatment approach for maternal syphilis with the contribution of the World Health Organization. Objective of the study was to understand the cost- effectiveness (CE) of screening antenatal syphilis using the RT strategy, to compare this intervention with RPR testing strategy. And in order to estimate CE we found out maternal syphilis prevalence. **METHODS:** Ingredients-based cost data and epidemiological data were collected retrospectively from the pregnancy medical records. Decision analysis was used to estimate the incremental CE of on-site PT compared to the current practice, off-site PRP/TPHA. Descriptive analysis has done for prevalence of syphilis, and economic analysis has done to calculate costs. Stability of cost-effectiveness ratios were evaluated by the univariate sensitivity analysis. **RESULTS:** With antenatal syphilis prevalence of 3.0% (1.46% in urban and 5.7% in sub-urban area), the cost effectiveness was US$ 14.60/DALY